

## WHAT IS CLAIMED IS:

- 1                   1.     A cartridge system for an electrical test probe, said system  
2 comprising:
- 3                   (a)     a main probing head body;
- 4                   (b)     electronics positioned within said main probing head body;
- 5                   (c)     a minimally inductive electrical contact mechanism directly  
6 electrically coupled to said electronics, said electrical contact  
7 mechanism protruding from said main probing head body;
- 8                   (d)     a probing tip cartridge interconnectable with said main probing  
9 head body;
- 10                  (e)     a probing tip with a conductive surface, at least part of said  
11 conductive surface being exposed;
- 12                  (f)     said probing tip interconnectable with said probing tip cartridge;
- 13                  (g)     said probing tip cartridge being a switchable and replaceable  
14 probing tip cartridge;
- 15                  (h)     said electrical contact mechanism contacting said conductive  
16 surface when said probing tip cartridge is in mating relationship with  
17 said main probing head body; and
- 18                  (i)     a signal testing instrument functionally associatable with said  
19 probing tip so that a signal through said probing tip may be  
20 measured by said signal testing instrument;
- 21                  (j)     wherein said cartridge system is suitable for high bandwidth  
22 applications.
- 1                   2.     The system of claim 1, said electronics being selectively electrically  
2 coupled to said signal testing instrument via a cable.
- 1                   3.     The system of claim 1, said probing tip cartridge being disposable.
- 1                   4.     The system of claim 1, said probing tip being a socket for receiving  
2 other probing tips.

1                   5.     The system of claim 1, said electrical contact mechanism being a  
2 signal spring contact.

1                   6.     The system of claim 1, said electrical contact mechanism being a  
2 leaf spring.

1                   7.     The system of claim 1, said probing tip cartridge being an  
2 integrated grabber cartridge.

1                   8.     The system of claim 1, further comprising:

2                   (a)    said main probing head body having a set of gripping jaws; and

3                   (b)    said probing tip cartridge having gripping surfaces;

4                   (c)    wherein said gripping jaws grip said gripping surfaces.

1                   9.     The system of claim 1 wherein said probing tip cartridge is held in  
2 place by a foot extending into said main probing head body.

1                   10.    The system of claim 1 wherein said probing tip cartridge is held in  
2 place by a rear boot gripping both said probing tip cartridge and said main probing head  
3 body.

1                   11.    A method for using a cartridge system for an electrical test probe,  
2 said method comprising the steps of:

3                   (a)    providing a main probing head body having electronics positioned  
4 therein and a minimally inductive electrical contact mechanism  
5 directly electrically coupled to said electronics;

6                   (b)    providing a switchable and replaceable probing tip cartridge;

7                   (c)    providing a probing tip with a conductive surface defined therein, at  
8 least part of said conductive surface being exposed, said probing  
9 tip interconnectable with said probing tip cartridge;

10                  (d)    protruding said electrical contact mechanism from said main  
11 probing head body;

12                  (e)    bringing said probing tip cartridge into mating relationship with said  
13 main probing head body;

- 14 (f) coupling electronically said electrical contact mechanism with said  
15 conductive surface;  
16 (g) securing said probing tip cartridge in mating relationship with said  
17 main probing head body;  
18 (h) providing a signal testing instrument;  
19 (i) associating functionally said probing tip with said signal testing  
20 instrument; and  
21 (j) testing a high bandwidth signal through said probing tip using said  
22 signal testing instrument.

1 12. The method of claim 11 wherein said step of securing further  
2 comprises the step of securing said probing tip cartridge in mating relationship with said  
3 main probing head body by extending a foot of said probing tip cartridge into said main  
4 probing head body.

1 13. The method of claim 11 said step of securing further comprises the  
2 step of securing said probing tip cartridge in mating relationship with said main probing  
3 head body by gripping both said probing tip cartridge and said main probing head body  
4 with a rear boot.

1 14. The method of claim 11 further comprising the steps of:  
2 (a) releasing said probing tip cartridge from its mating relationship with  
3 said main probing head body;  
4 (b) removing said probing tip cartridge;  
5 (c) providing a replacement probing tip cartridge having a probing tip  
6 with a conductive surface defined therein, at least part of said  
7 conductive surface being exposed;  
8 (d) bringing said replacement probing tip cartridge into mating  
9 relationship with said main probing head body;  
10 (e) coupling electronically said electrical contact mechanism with said  
11 conductive surface; and  
12 (f) securing said replacement probing tip cartridge in mating  
13 relationship with said main probing head body.

1                   15.    The method of claim 11 further comprising the step of gripping  
2 surfaces of said probing tip cartridge using a set of gripping jaws of said main probing  
3 head body.

1                   16.    A cartridge system for an electrical test probe, said system  
2 comprising:

- 3                   (a)    a main probing head body;
- 4                   (b)    electronics positioned within said main probing head body;
- 5                   (c)    a switchable and replaceable probing tip cartridge;
- 6                   (d)    a probing tip interconnectable with said probing tip cartridge; and
- 7                   (e)    a minimally inductive electrical contact mechanism for electrically  
8 coupling said electronics to said probing tip when said probing tip  
9 cartridge is in mating relationship with said main probing head  
10 body.

1                   17.    The system of claim 16, said electrical contact mechanism  
2 protruding from said main probing head body.

1                   18.    The system of claim 16, said electronics being selectively  
2 electrically coupled to a signal testing instrument via a cable.

1                   19.    The system of claim 16, said probing tip cartridge being held in  
2 place by at least one foot extending into said main probing head body.

1                   20.    A cartridge system for an electrical test probe, said system  
2 comprising:

- 3                   (a)    a main probing head body;
- 4                   (b)    electronics positioned within said main probing head body;
- 5                   (c)    a switchable and replaceable probing tip cartridge, said probing tip  
6 cartridge having at least one foot;
- 7                   (d)    a probing tip interconnectable with said probing tip cartridge;
- 8                   (e)    a minimally inductive electrical contact mechanism protruding from  
9 said main probing head body, said electrical contact mechanism for  
10 electrically coupling said electronics to said probing tip when said

11                   probing tip cartridge is in mating relationship with said main probing  
12                   head body; and  
13           (f)       said probing tip cartridge being held in place by said at least one  
14                   foot extending into said main probing head body.